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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/937,114	09/20/2001	Andrew Bartlett	MCA-460 PC/US	4663

25182 7590 07/25/2008

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EXAMINER	
MENON, KRISHNAN S	
ART UNIT	PAPER NUMBER
1797	
MAIL DATE	DELIVERY MODE
07/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/937,114	BARTLETT ET AL.	
	Examiner	Art Unit	
	Krishnan S. Menon	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2,5-8 and 10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *2,5-8 and 10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 2,5-8, and 10 are pending as amended on 5/27/08 in the RCE of 10/25/07.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 2,5-8 and 10 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3 and 4 of copending Application No. 10/805,032. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of '032 application recite the same limitation as in the instant claims.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

In response to the argument that applicant would file a terminal disclaimer when the application becomes in condition for allowance: All rejections and objections must be cleared before the application becomes in condition for allowance.

Claim Rejections - 35 USC § 103

1. Claims 2,5-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2,302,042 A in view of applicant's submission that Santoprene® is well known in the responses to prior office actions

GB teaches a filtration device having filter layers and screen layers, filter layers and screen layers having openings for inlets and outlets as claimed, with the openings having thermoplastic seals integrally formed (page 7 lines 9-15), the seals extending at least 0.001, 0.002, or 0.005 from the surfaces of the screens, and from the surface of the filters, all as claimed: see abstract, 3rd paragraph of page 1; page 2, lines 5-35; page 3, lines 1-12; and page 7, lines 9-15 and 20-33. Since the seal material is heat-sealed and/or penetrates the diffusion layer (mesh screen), the thickness of the seal layer extending from each screen layer would be greater than the thicknesses claimed. Such penetration would show that the seal inherently forms through the layers. The seal taught by the reference is a copolymer ethylene-vinyl acetate (EVA), which is a thermoplastic elastomer. Applicant lists EVA as one of the preferred materials for the seal in the specification.

There are three questions raised by the applicant traversing this rejection.

(1) Is EVA copolymer a thermoplastic elastomer as claimed? The answer is yes, see the web page copied below from << http://en.wikipedia.org/wiki/Ethylene-vinyl_acetate >>, explaining the structure of EVA. US Patents 4,324,866 and 6,262,137 describe EVA as thermoplastic elastomer. Pramanik, et al, in Journal of Material Science Letters describe EVA as a thermoplastic elastomer, depending on the vinyl acetate content.

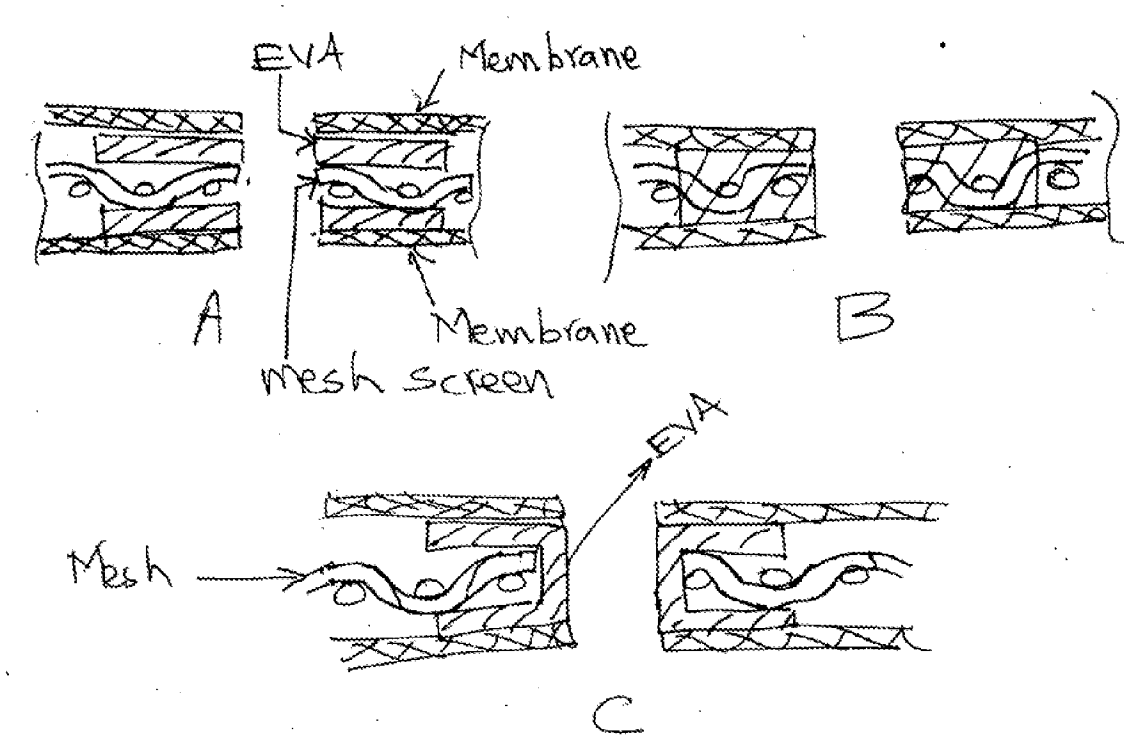
(2) Does the reference teach heat sealing EVA to the mesh? The answer is, again, yes. The above cited lines as well as the lines 15-22 shows evidence that it is. There is no reason for the reference to teach that the EVA has a lower melting/softening point, and that it penetrates the diffusion layer, if it is not heat sealed.

(3) Does the reference teach that EVA penetrate through the spacer layers? YES. See the lines captured from the reference, pages 6 and 7:

"The diffusion layer in such an embodiment is preferably a fibrous nonwoven web or a polymeric or metallic mesh, and the diffusion layer is further preferably partially embedded in the copolymer positioned between the membrane and the support material."

The paragraph at page 7, lines 21-34 describes formation of feed and permeate holes through the filtration media and diffusion layers (applicant's feed screen is a diffusion layer). The copolymer (EVA) is "... positioned around each fluid pathway, e.g., around a feed hole through a diffusion layer, so as to avoid contamination between the various fluid streams". This means that the copolymer seals the diffusion layer around the hole through its thickness, or it penetrates through the diffusion layer at the hole

edges. See the following hand-drawn graphics to prove the point that the copolymer has to penetrate/go through the diffusion layer completely to form the seal:



Hand-drawn sketches showing how the Examiner understands the teaching of the reference GB-230242-A: In figure A, the EVA layer is only placed on the top and bottom surfaces of the feed-screen layer around a permeate passage hole, in which the feed would leak into the permeate passage through the screen mesh. In figure B, EVA penetrates through the mesh of the screen. In figure C, the EVA penetrates through the hole around the edges of the screen. In both B and C, there will be no leak. Both figure B and C read on applicant's claims. The Examiner submits that the GB reference

implies the structure in either of Figures B or C, or at least, it would be obvious to one of ordinary skill in the art.

With respect to the newly added amendment to the claims – the composition of the thermoplastic elastomer, which is recited as Santoprene® in applicant's specification, use of such well known thermoplastic elastomer would be obvious to one of ordinary skill in the art as an alternative for the EVA used in the reference. According to KSR Int'I. v. Teleflex Inc., 127 S. Ct. 1727, 1732, 82 USPQ2d 1385, 1390 (2007), it would be obvious to use known equivalents with predictable results, and "[T]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results". Applicant has made at least two submissions in the form of response to office actions that Santoprene® is a well known thermoplastic elastomer that is commonly used in the art.

2. Claims 2,5-8 and 10 are rejected under 35 USC 103(a) as unpatentable over Rogemont et al (US 4,701,234) in view of GB 2 302 042 A and/or Towe et al (US 6,235,166)

Rogemont teaches interposed sealed support of permeable membranes with a permeable mesh comprising plurality of openings in a screen having uniform thickness, one or more ports and integral gasket of thermoplastic elastomer with gasket around the ports and extending beyond the screen surfaces as claimed – see abstract, column 1 lines 15-52, column 3 lines 20-30, column 4 lines 28-33 and figures. The extension of the gasket above the mesh falls within the range claimed in claims 5-8. See column 4

lines 28-35. The reference teaches membrane stacks for microfiltration, ultrafiltration, gas separation, etc., see column 1 lines 5-12.

The teaching of the reference differs in the "thermoplastic elastomer" as the seal in claims 2 and 5-8. Claim 1 recites a filtration device comprising one or more filter layers, with the filter as having one or more openings around which a fluid tight seal is formed by an integral seal that is formed through the filter, with thickness greater than the filter, and made of an elastomer. Claim 10 recites a filtration module formed by stacks of layers of membrane and screen material with the seal around the ports or holes. GB teaches a thermoplastic elastomer (ethylene vinyl acetate) seal around the holes in place of other seal materials in page 7 lines 9-15 and 20-33. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of GB in the teaching of Rogemont because GB teaches that the thermoplastic used requires low extractables (page 1 lines 22-34), and that the layers can be sealed together as one integral body (page 7 lines 20-33) leading to high quality devices (paragraph linking pages 7 and 8).

Towe teaches sealing the edges of a plastic mesh spacer with thermoplastic elastomer, wherein the thermoplastic elastomer is molded around the plastic mesh (insert-molding), in a similar fashion, with the mesh at least partially embedded into the thermoplastic, as claimed for providing ports for fluid passage – see abstract, figure 2a and column 6, lines 5-20. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Towe in the teaching of Rogemont for forming the seal using a thermoplastic elastomer in place of the silicone because the seal can

be made integral by injection molding and thus help mass production as taught by Towe. It would also be obvious to combine these references for a predictable outcome: See KSR Int'l. v. Teleflex Inc., 127 S. Ct. 1727, 1732, 82 USPQ2d 1385, 1390 (2007). "it is commonsense that familiar items have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle". "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."

Regarding the chemical composition of the thermoplastic elastomer used, Towe teaches the use of thermoplastic elastomers, specifically including thermoplastic vulcanizates and thermoplastic elastomeric olefins (see Towe, column 6, lines 5-20). Santoprene® was described as a thermoplastic vulcanizate (applicant's remarks of 3/20/07, at page 5).

Response to Arguments

Applicant's arguments filed 5/27/08 have been fully considered but they are not persuasive.

Arguments about the GB reference: these were addressed in the previous office actions as well as in the rejection above.

Argument traversing the showing that EVA is a thermoplastic elastomer: applicant, in the argument against Wikipedia has failed to notice that the Office has

used several other references in addition to Wikipedia to show that EVA is considered by one of ordinary skill as a thermoplastic elastomer.

Argument about Rogemont in view of GB: motivation to combine is clearly stated in the rejection. Applicant's reasons explaining why one of ordinary skill in the art would not combine the references is not persuasive. First of all, EVA is a thermoplastic elastomer because it has both thermoplastic and elastomeric characteristics, as shown with evidence above. Additionally, Towe teaches using a thermoplastic elastomer, such as a vulcanizate for insert molding.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on 571-272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Krishnan S Menon/
Primary Examiner, Art Unit 1797